



Implications of global climate change for the assessment and management of human health risks of chemicals in the natural environment

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Abstract:

Global climate change (GCC) is likely to alter the degree of human exposure to pollutants and the response of human populations to these exposures, meaning that risks of pollutants could change in the future. The present study, therefore, explores how GCC might affect the different steps in the pathway from a chemical source in the environment through to impacts on human health and evaluates the implications for existing risk-assessment and management practices. In certain parts of the world, GCC is predicted to increase the level of exposure of many environmental pollutants due to direct and indirect effects on the use patterns and transport and fate of chemicals. Changes in human behavior will also affect how humans come into contact with contaminated air, water, and food. Dietary changes, psychosocial stress, and coexposure to stressors such as high temperatures are likely to increase the vulnerability of humans to chemicals. These changes are likely to have significant implications for current practices for chemical assessment. Assumptions used in current exposure-assessment models may no longer apply, and existing monitoring methods may not be robust enough to detect adverse episodic changes in exposures. Organizations responsible for the assessment and management of health risks of chemicals therefore need to be more proactive and consider the implications of GCC for their procedures and processes.

Source: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3601433>

Resource Description

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change;
surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience:

audience to whom the resource is directed

Researcher

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Food/Water Quality, Food/Water Quality, Temperature

Climate Change and Human Health Literature Portal

Air Pollution: Allergens, Ozone, Particulate Matter

Food/Water Quality: Biotoxin/Algal Bloom, Biotoxin/Algal Bloom, Chemical, Chemical

Temperature: Extreme Heat

Geographic Feature: 

resource focuses on specific type of geography

None or Unspecified

Geographic Location: 

resource focuses on specific location

Global or Unspecified

Health Co-Benefit/Co-Harm (Adaption/Mitigation): 

specification of beneficial or harmful impacts to health resulting from efforts to reduce or cope with greenhouse gases

A focus of content

Health Impact: 

specification of health effect or disease related to climate change exposure

Cancer, Infectious Disease, Mental Health/Stress, Morbidity/Mortality, Neurological Effect, Respiratory Effect, Other Health Impact

Infectious Disease: Foodborne/Waterborne Disease

Foodborne/Waterborne Disease: Marine Toxin Syndrome

Mental Health Effect/Stress: Stress Disorder

Other Health Impact: mycotoxins

Intervention: 

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Medical Community Engagement: 

resource focus on how the medical community discusses or acts to address health impacts of climate change

A focus of content

Mitigation/Adaptation: 

mitigation or adaptation strategy is a focus of resource

Adaptation, Mitigation

Resource Type: 

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format or standard characteristic of resource

Review

Timescale: ☒

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☒

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content